

Fuji IX GP Glass Ionomer (Project 97-23) (09/98)

Fuji IX GP is GC America's latest glass ionomer restorative material. Fuji IX is a member of the newest class of self-cure glass ionomer restorative materials that has been categorized as "densified", "condensible", or "viscous" by various authors. Fuji IX GP was developed by GC International as the restorative material for the World Health Organization's Atraumatic Restorative Treatment (ART) technique. The ART technique involves caries removal and tooth restoration with adhesive restorative materials using only hand instrumentation. This restorative service is usually performed by auxiliary personnel who have limited experience in dental procedures and often provided under primitive field conditions.



Although GC International considers exact particle size information proprietary, Fuji IX GP has a smaller mean particle size than earlier self-cure glass ionomer restorative materials. This smaller particle size is purported to give improved wear rates and faster setting time than earlier glass ionomer materials. Fuji IX GP powder is composed of 95 percent by weight aluminofluorosilicate glass with 5 percent polyacrylic acid powder. Fuji IX GP liquid is composed of 50 percent distilled water, 40 percent polyacrylic acid, and 10 percent polybasic carboxylic acid. Fuji IX GP is prepared with a powder/liquid ratio of 3.6/1.0 and should be mixed in 25 to 30 seconds. Fuji IX GP has a stated two-minute working time with a net setting time of two minutes and twenty seconds. GC America states that final finishing and polishing may be initiated six minutes from the start of mixing the material. The material should be protected with either Fuji Varnish or Fuji Coat LC during initial setting and after final finishing to prevent material degradation from corresponding moisture contamination or desiccation.

GC America states that Fuji IX is a condensible (similar to amalgam) general-purpose posterior glass ionomer. Also, this restorative material is promoted as possessing excellent clinical handling characteristics. Fuji IX's purported uses include: Amalgam/Composite/Compomer alternative for pediatric and geriatric patients; intermediate restorative; long-term provisional restorations for posterior teeth; final restoration for non-stress bearing areas; and core build-up and sandwich material. Fuji IX GP's purported advantages over current glass ionomer materials are decreased moisture sensitivity, improved wear characteristics, and no requirement for a visible light curing unit (if Fuji Varnish is used).

Fuji IX GP is available in both powder/liquid and precapsulated delivery systems. For the purpose of this evaluation, DIS evaluated the powder/liquid delivery system to evaluate this material's suitability as a military contingency interim or temporary restorative material. Intermediate Restorative Material (IRM) has traditionally been used as a temporary restorative material in dentistry. Although its use has diminished in recent years because of the advent of glass-ionomer cements, it remains an important component of readiness dental kits. Unfortunately, IRM has some significant limitations as a temporary restorative material including sensitivity to humidity and temperature, poor long-term sealing, lack of adhesion to tooth structure, and challenging handling characteristics. A more user-friendly readiness provisional material that has better performance features than IRM would be welcomed by military dentistry.

Manufacturer:

GC America Inc
3737 West 127th Street
Alsip, IL 60803
(800) 323-3386
(708) 597-0900
(708) 371-5148 FAX

Suggested Retail Price:

\$80.00 Fuji IX GP Standard 1:1 Package (product number 439101) contains:
15 gm powder (A2)
8 gm liquid
Mixing pad
Plastic spatula
Instructions

Government Price:

\$31.20 Product number 439101, contents same as above.

ADVANTAGES:

- + Easy to integrate into existing clinical technique.
- + Viscosity/consistency can be tailored to meet clinical requirements.
- + Only glass ionomer restorative material in its class that is available in non-encapsulated form.
- + Does not require visible light curing unit.
- + Simple, straight-forward, compact packaging.
- + Faster clinical set than conventional auto-cure glass ionomer restorative materials.
- + Possesses sufficient radiopacity.
- + Provides adhesion to tooth structure.
- + Instructions are clear and easy to understand.
- + Majority of users could condense material without difficulty.
- + Available in precapsulated delivery system.
- + Evaluators found it to be "as easy" or "easier" to finish as other glass ionomer materials.
- + Proven clinical performance in World Health Organization Atraumatic Restorative Technique.
- + Varnish tolerated well by patients.

DISADVANTAGES:

- May stick to instruments.
- Requires a varnish (or VLC glaze) for definitive restorations.

SUMMARY AND CONCLUSIONS:

Fuji IX GP was well received by the clinical evaluators. Users liked the simple, compact packaging and found that the instructions were easy to follow. The clinical evaluators found Fuji IX GP easy to integrate into their existing clinical practice and were impressed with the material's apparent physical properties, finding Fuji IX GP to be a clinically dense and tough material. Fuji IX GP afforded excellent retention when used as a provisional, and all of the evaluators found it to be as easy or easier to finish than other glass ionomers that they were familiar with. Overall, users appreciated Fuji IX GP's clinical handling characteristics, and the majority could condense it without difficulty. Fuji IX GP is radiopaque, adheres to tooth structure and is a member of a class of materials that exhibits chemical adhesion and fluoride release and recharge. It is the only glass ionomer restorative material in its class that is available as a non-encapsulated form (precapsulated is also available) and does not require a visible light curing unit. Fuji IX GP has shown excellent clinical results in the World Health Organization Atraumatic Restorative Technique program. **Fuji IX GP** is rated **Acceptable** for a general-purpose glass ionomer restorative material. **Fuji IX GP** is **Recommended** as the default provisional restoration material replacing IRM in military contingency operations.